TITLE

# DEVICE AND METHOD FOR SUPPLYING COMMENTARY INFORMATION

## BACKGROUND OF THE INVENTION

### Field of the Invention

The present invention relates in general to a device and method for supplying commentary information. In particular, the present invention relates to a device and method for supplying commentary information about a movie in a DVD disc through a network.

### Description of the Related Art

The conventional way for viewers to get commentary information about a movie is from newspapers, magazines, or a supplement to the ending of a film. However, the traditional way can't meet the need that a viewer requires ready commentary information while watching a movie. Currently, commentary information can be provided on the Internet via World Wide Web (WWW) but the transmission of commentary information along with video information is time-consuming.

## SUMMARY OF THE INVENTION

The object of the present invention is to provide a device and method for supplying commentary information about DVDs through a network. The related commentary information about DVDs can be offered to the users of the DVD players in the client end in real time.

To achieve the above-mentioned object, the present invention provides a device for supplying a commentary stream related to a data unit via a network. The device includes a server and a client end. The server stores the commentary stream which has first commentary information and corresponding navigation commands, and the server outputs the

commentary stream according to a data unit identifier. The client end reads the data unit identifier, outputs the data unit identifier to the server via the network, receives the commentary stream via the network, then provides second commentary information from the data unit according to the navigation commands, and then outputs commentary information corresponding to a combination of the first commentary information and the second commentary information.

Another object of the present invention is that the user can record his personal commentary information and transmit it to the server for other viewers' reference.

Accordingly, the device for supplying commentary information in the present invention further includes: a navigation recoder, for recording data extracted from the data unit; a RNS(Remote Navigation Stream) multiplexer, coupled to the RNS multiplexer, for receiving the extracted data and voice images, and texts provided by the user, and outputting a client commentary stream; and an RNS transmitter, coupled to the RNS multiplexer, for transmitting the client commentary stream.

The present invention further provides a method for supplying a commentary stream related to a data unit. The method includes the steps as below. A data unit identifier of the data unit is read at a client end and the data unit identifier is transmitted from the client end to a server through a network. Then the server outputs a commentary stream having first commentary information and navigation commands to the client end according to the data unit identifier. The client end provides second commentary information from the data unit according to the navigation commands. Finally, the client end outputs commentary information corresponding to a combination of the first commentary information and the second commentary information.

## BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more fully understood from the detailed description given hereinbelow and the accompanying drawings, given by way of illustration only and thus not intended to be limitative of the present invention.

FIGS. 1~2 show flow charts of a method for processing a commentary stream in accordance with the embodiment of the present invention;

FIGS. 3A~3B show block diagrams of a device in the client end in accordance with the preferred embodiment of the present invention;

FIG. 4 shows a block diagram of a device in the server in accordance with the preferred embodiment of the present invention.

**DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

The present invention provides a method and device for accessing DVD commentary information services in a client/server environment. Thereby, DVD player users connected to Internet may have easy access to the desired information on the Internet.

Refer to FIG.1. At first, a client end outputs a DVD identifier to a server via a network(step 410). Then, the server provides commentary stream types corresponding to the DVD identifier(step 420). Next, after the client end chooses a commentary stream type that is desired(step 430), the server verifies the chosen commentary stream type and outputs a commentary stream (step 440). Finally, the client end may terminate receiving the commentary stream (step 450).

FIG.2 is a flowchart of a process after the client end receives the commentary stream via an RNS receiver. At first, the RNS receiver of the client end receives the commentary stream and a returned DVD identifier via a network (step 501). Then, the client end verifies if the returned DVD identifier

corresponds to the DVD identifier that was previously outputted (step 502). If so, the process goes to step 504; otherwise, the commentary stream is rejected (step 503). In step 504, a commentary stream type is chosen according to the request and the equipment of the client end. The commentary stream may include navigation commands, audio data, video data, text commands, and drawing commands. According to the navigation commands, the film extracts what a film critic comments on, and can be provided by the DVD. The audio data is the voice of the film critic. The video data is the image of the film critic. According to the text commands, the text data offered by the film critic can be shown. According to the drawing commands, the specific frame of the film can be marked on an area that the film critic tries to make a description of. For example, a circle can be used to mark the area. Next, in step 505 the data package of the commentary stream is received. Then, navigation commands (step 506), text commands (step 509), drawing commands(step 511), video data(step 513), and audio data (step 515) are parsed from the data package and transmitted to a DVD navigator (step 508), a text reader(step 510), a drawer (step 512), a video decoder(step 514), and an audio decoder(step 516), respectively. If the commentary stream is not ended(step 517), the process goes back to step 505 until the commentary streaming is ended.

The devices according to the embodiment of the invention are described as below.

FIG.3A shows the device of the client end 200. An RNS receiver 210 receives the commentary stream. An RNS parser 220, coupled to the RNS receiver 210, parses the commentary stream into navigation commands, audio data, video data, text commands, and drawing commands. The DVD navigator 230, coupled to the RNS parser 220, gets the film extracts a film critic comments on according to the navigation commands.

A DVD reading module 260, coupled to the DVD navigator 230, includes a DVD player 262 and an UDF(Universal Disc Format)file system 261. The DVD player 262 reads a DVD to get a DVD identifier and to provide corresponding film extracts that film critics make a description of, according to the navigation commands. The UDF(Universal Disc Format)file system 261 is a storing format for DVD data read by the DVD player 262. An audio module 250, coupled to the RNS parser 220 and the DVD navigator 230, includes an audio decoder 251, a compressed voice decoder 252, an audio mixer 253, and a sound device 254. The audio decoder 251 receives and decodes the audio part of the DVD data, in the format such as AC3, MPEG2, or LPCM. The compressed voice decoder 252 receives and decodes the compressed voice data of the film critics, in the format such as A-CELP. The audio mixer 253 mixes the audio part of the DVD data and the voice data of the film critic so as to generate mixed audio data. The sound device 254, such as a speaker, receives the mixed audio data and outputs corresponding sounds. A video module 240, coupled to the RNS parser 220 and the DVD navigator 230, includes a video decoder 241, a subtitle decoder 242, a text render 243, a drawer 244, a video mixer 245, and a display device 246. The video decoder 241 receives and decodes the video part of the DVD film extracts and the image of the film crictic in the format such as MPEG 1,2, or 4. The subtitle decoder 242 receives and decodes the subtitle part of the DVD film extracts. The text render 243 receives and decodes text commands for displaying text data from the film crictic. The drawer 244 receives and decodes the drawing commands for marking the specific frame of the DVD film. The video mixer 245 mixes the aforementioned video data and outputs them to the display device 246, such as a TV monitor, for displaying the coprresponding images.

Refer to FIG. 3B. the user can also author his personal commentary information about the DVD film he is watching. The

personal commentary information can be transmitted to the sever end 100 via a network 300 for the other viewers' reference. Therefore, the device of the client end 200 further includes: a navigation recorder 270, for recording data extracted from a DVD by a user; an RNS multiplexer 271, coupled to the navigation recorder 270, for receiving the extracted DVD data, and voice, images, and texts provided by the user respectively via a microphone, a video camera, and a keyboard, and outputting a client commentary stream; an RNS transmitter 272, coupled to the RNS multiplexer 271, for transmitting the client commentary stream; and a buffer 273, for storing the client commentary stream.

FIG. 4. shows the device of a server 100, including a data base 130, an RNS receiver 140, a switch 120, and an RNS transmitter 110. The data base 130 stores commentary streams. The RNS receiver 140 receives client commentary streams from users. The switch 120 switches between the data base 130 and the RNS receiver 140 so as to select the commentary streams or the client commentary streams to output to the RNS transmitter 110. The RNS transmitter 110 transmits the commentary streams or the client commentary streams to the client end.

While the invention has been described with reference to an illustrative embodiment, the description is not intended to be construed in a limiting sense. Various modifications of the illustrative embodiment, as well as other embodiments of the invention, will be apparent to those persons skilled in the art upon reference to this description. It is therefore contemplated that the appended claims will cover any such modifications or embodiments as may fall within the scope of the invention defined by the following claims and their equivalents.